W3C Recommendation
TTML Profiles for Internet Media Subtitles and Captions

IMSC

Worldwide Subtitles and Captions Convergence

Pierre-Anthony Lemieux, Sandflow Consulting (pal@sandflow.com)
Supported by MovieLabs
SMPTE-TT

SMPTE ST 2052-1:2013 (initially published in 2010)

Designated safe harbor format by the US Federal Communications Commission [FCC § 79.103 (c), 2012]

Extends TTML with image support (@smpte:backgroundImage) and additional metadata (smpte:information)

Imposes no practical constraints on TTML

- Poorly supported features, e.g. #clockMode-gps
- No constraint on document complexity
CFF-TT

Practical profile of SMPTE-TT developed by Ultraviolet ecosystem

▪ Public specification supported by tools and vendors
▪ Based on study of studio catalog titles and CEA-608

Contributed to W3C as basis for IMSC (2013)
IMSC

Worldwide collaboration of the W3C Timed Text Working Group (TTWG)

Application of TTML for Internet subtitles and captions

Reduces fragmentation by bringing together multiple profiles of TTML

- Superset of CFF-TT
- Practical application of SMPTE-TT (ST 2052-1)
- Superset of EBU-TT-D (Tech 3380) (developed by the EBU)
- Superset of SDP-US

Intended to evolve with worldwide subtitle and caption requirements
Status

IMSC 1 Recommendation [April 2016]

Superseded by IMSC 1.0.1 Recommendation [April 2018]

IMSC 1.1 Candidate Recommendation [May 2018]

- Based on TTML 2
- Superset of IMSC 1.0.1
- Adds support for Japanese language features, HDR presentations, stereoscopic presentations...